

In the case of the broadband CDMA system chosen for the FDD mode (FDD frequency division duplex) for the UMTS mobile radio system, when transmitting from the base station to the subscriber station in the downlink direction, the problem arises that the number of orthogonal spread codes which are too useful at the same time is limited, which makes it more difficult to support variable data rates. Thus, with relatively high traffic densities in the system, it is not possible to allocate to all subscriber stations as many dedicated (i.e. used exclusively by the subscriber station) channels (DCH) as they need for transmission at their respective highest data rate.

For this reason, common channels, "shared channels" (DSCH downlink shared channel), are defined in the downlink direction, in this regard cf. ETSI, SMG2, UMTS-L1, Tdoc SMG2 UMTS-L1 559/98, dated November 9, 1998. The common channels are formed within the broadband frequency band by spread codes which are temporarily allocated to various connections or subscriber stations for the duration of one or more frames in each case. In this context, however, the problem arises of how it is possible to signal to a subscriber station with minimum complexity whether information is being transmitted for the subscriber station, and if so in which of these common channels.

In addition, ETSI SMG2 UMTS-L1, Tdoc SMG2 UMTS-L1 559/98, dated November 9, 1998, discloses that the data rates for the services transmitted using time-division multiplex are signaled using the TFCI parameter, which is transmitted during each frame as part of the control information, i.e. in-band. To ensure rapid allocation of common channels, explicit signaling is proposed which uses a particular number of these TFCI bits



This solution has the drawback that, as a result of this, for a given number of TFCI bits, the number of combination options for transport formats for the services is significantly limited, which has a considerable effect on flexibility when transmitting variable data rates.

The invention is based on the object of specifying a method and a radio communication system which, when using common channels for a plurality of connections, increase the flexibility of resource allocation when transmitting variable data rates. This object is achieved by the method based on the features of claim 1 and by the communication system based on the features of claim 10. Advantageous developments can be found in the subclaims.

The invention is based on the idea of implicitly signaling the used common channels using the data rate, and of permitting a plurality of combinations of channels (spread codes) as alternatives only for particular data rates for the individual services. This saves transmission capacity, because there is no need to reserve any individual bits within the TFCI parameter just for allocating the common channels to different connections. The data rate is signaled in-band, with this information relating to the data rate not needing to be contained in full in each frame. Information from the connection context or from preceding frames can likewise be used for determining the data rate.

In accordance with one advantageous development of the invention, mapping the same combination of transport formats for the services onto various channels using the TFCI allows a very high degree of flexibility can